

**Conditions of Approval for the Application(s) for Permit to Drill**  
**ENVIRONMENTAL ASSESSMENT – WY-070-11-172**  
**Lance Oil & Gas Company, Inc., Bear Draw Gamma**  
**Bureau of Land Management, Buffalo Field Office**

**POD Name: Bear Draw Gamma**

Field Office: Buffalo Field Office  
Address: 1425 Fort Street  
Buffalo, Wyoming 82834  
Office Telephone Number: 307-684-1100

BLM approves the following 71 coalbed natural gas (CBNG) applications for permit to drill (APDs) and associated infrastructure:

#	Well name	Well #	Qtr/Qtr	Sec	RNG	TWP	Lease #
1	Bear Draw Gamma BDU	11-1	NWNW	1	79W	49N	WYW144808
2	Bear Draw Gamma BDU	12-1	SWNW	1	79W	49N	WYW141989
3	Bear Draw Gamma BDU	21-1	NENW	1	79W	49N	WYW144808
4	Bear Draw Gamma BDU	22-1	SENW	1	79W	49N	WYW141989
5	Bear Draw Gamma BDU	11-19	NWNW	19	78W	50N	WYW146920
6	Bear Draw Gamma BDU	12-19	SWNW	19	78W	50N	WYW146920
7	Bear Draw Gamma BDU	14-19	SWSW	19	78W	50N	WYW146920
8	Bear Draw Gamma BDU	21-19	NENW	19	78W	50N	WYW146920
9	Bear Draw Gamma BDU	32-19	SENE	19	78W	50N	WYW146920
10	Bear Draw Gamma BDU	41-19	NENE	19	78W	50N	WYW146920
11	Bear Draw Gamma BDU	42-19	SENE	19	78W	50N	WYW146920
12	Bear Draw Gamma BDU	12-30	SWNW	30	78W	50N	WYW146924
13	Bear Draw Gamma BDU	14-30	SWSW	30	78W	50N	WYW146924
14	Bear Draw Gamma BDU	21-30	NENW	30	78W	50N	WYW146924
15	Bear Draw Gamma BDU	23-30	NESW	30	78W	50N	WYW146924
16	Bear Draw Gamma BDU	34-30	SWSE	30	78W	50N	WYW146924
17	Bear Draw Gamma BDU	43-30	NESE	30	78W	50N	WYW146924
18	Bear Draw Gamma BDU	21-2	NENW	2	79W	50N	WYW140577
19	Bear Draw Gamma BDU	12-3	SWNW	3	79W	50N	WYW140577
20	Bear Draw Gamma BDU	14-3	SWSW	3	79W	50N	WYW140577
21	Bear Draw Gamma BDU	21-3	NENW	3	79W	50N	WYW140577
22	Bear Draw Gamma BDU	22-3	SENW	3	79W	50N	WYW140577
23	Bear Draw Gamma BDU	32-3	SWNE	3	79W	50N	WYW140577
24	Bear Draw Gamma BDU	33-3	NWSE	3	79W	50N	WYW140577
25	Bear Draw Gamma BDU	34-3	SWSE	3	79W	50N	WYW140577
26	Bear Draw Gamma BDU	43-3	NESE	3	79W	50N	WYW140577
27	Bear Draw Gamma BDU	12-22	SWNW	22	79W	50N	WYW147850
28	Bear Draw Gamma BDU	14-22	SWSW	22	79W	50N	WYW142845
29	Bear Draw Gamma BDU	23-22	NESW	22	79W	50N	WYW142845
30	Bear Draw Gamma BDU	32-22	SWNE	22	79W	50N	WYW147850
31	Bear Draw Gamma BDU	34-22	SWSE	22	79W	50N	WYW137036
32	Bear Draw Gamma BDU	41-22	NENE	22	79W	50N	WYW147850
33	Bear Draw Gamma BDU	12-25	SWNW	25	79W	50N	WYW139818

#	Well name	Well #	Qtr/Qtr	Sec	RNG	TWP	Lease #
34	Bear Draw Gamma BDU	14-25	SWSW	25	79W	50N	WYW139818
35	Bear Draw Gamma BDU	21-25	NENW	25	79W	50N	WYW139818
36	Bear Draw Gamma BDU	22-25	SENW	25	79W	50N	WYW139818
37	Bear Draw Gamma BDU	24-25	SESW	25	79W	50N	WYW139818
38	Bear Draw Gamma BDU	34-25	SWSE	25	79W	50N	WYW137036
39	Bear Draw Gamma BDU	41-25	NENE	25	79W	50N	WYW137036
40	Bear Draw Gamma BDU	42-25	SENE	25	79W	50N	WYW137036
41	Bear Draw Gamma BDU	12-26	SWNW	26	79W	50N	WYW137036
42	Bear Draw Gamma BDU	13-26	NWSW	26	79W	50N	WYW142845
43	Bear Draw Gamma BDU	21-26	NENW	26	79W	50N	WYW137036
44	Bear Draw Gamma BDU	23-26	NESW	26	79W	50N	WYW142845
45	Bear Draw Gamma BDU	32-26	SWNE	26	79W	50N	WYW142845
46	Bear Draw Gamma BDU	34-26	SWSE	26	79W	50N	WYW142845
47	Bear Draw Gamma BDU	41-26	NENE	26	79W	50N	WYW142845
48	Bear Draw Gamma BDU	43-26	NESE	26	79W	50N	WYW142845
49	Bear Draw Gamma BDU	11-27	NWNW	27	79W	50N	WYW140577
50	Bear Draw Gamma BDU	14-27	SWSW	27	79W	50N	WYW140577
51	Bear Draw Gamma BDU	22-27	SENW	28	79W	50N	WYW140578
52	Bear Draw Gamma BDU	34-27	SWSE	27	79W	50N	WYW140577
53	Bear Draw Gamma BDU	42-27	SENE	27	79W	50N	WYW143128
54	Bear Draw Gamma BDU	43-27	NESE	27	79W	50N	WYW140577
55	Bear Draw Gamma BDU	44-27	SESE	27	79W	50N	WYW140577
56	Bear Draw Gamma BDU	12-34	SWNW	34	79W	50N	WYW140577
57	Bear Draw Gamma BDU	14-34	SWSW	34	79W	50N	WYW140577
58	Bear Draw Gamma BDU	22-34	SENW	34	79W	50N	WYW140577
59	Bear Draw Gamma BDU	34-34	SWSE	34	79W	50N	WYW140577
60	Bear Draw Gamma BDU	32-34	SWNE	34	79W	50N	WYW140577
61	Bear Draw Gamma BDU	42-34	SENE	34	79W	50N	WYW140577
62	Bear Draw Gamma BDU	43-34	NESE	34	79W	50N	WYW140577
63	Bear Draw Gamma BDU	44-34	SESE	34	79W	50N	WYW140577
64	Bear Draw Gamma BDU	12-35	SWNW	35	79W	50N	WYW137036
65	Bear Draw Gamma BDU	23-35	NESW	35	79W	50N	WYW140577
66	Bear Draw Gamma BDU	24-35	SESW	35	79W	50N	WYW140577
67	Bear Draw Gamma BDU	32-35	SWNE	35	79W	50N	WYW137036
68	Bear Draw Gamma BDU	42-35	SENE	35	79W	50N	WYW137036
69	Bear Draw Gamma BDU	43-35	NESE	35	79W	50N	WYW140577
70	Bear Draw Gamma BDU	44-35	SESE	35	79W	50N	WYW140577
71	Bear Draw Gamma Tear Drop	14-31	SWSW	31	78W	50N	WYW144232

#### **Water Management:**

The approved water management plan (WMP) includes 3 water management strategies:

1. Treatment of produced water at the Powder Valley Unit CBM Facility, located in the NWSE of Section 29, T50N R77W.
2. Containment of produced water in Western Gas Resource #8 Reservoir, at NENE of Section 25 T50N R78W.
3. Containment of produced water in 32-30-5078 Stock Reservoir, at SWNE of Section 30 T50N R78W.

**Deferrals:**

BLM defers decision the following 2 APDs and associated infrastructure.

#	Well Name	Environmental Issue/Justification
1	BDU Federal 44-19-5078	Pending further mitigation as an operator committed measure to reduce impacts to 2 active golden eagle nests (#s 6252 and 12592) to preclude an MBTA or BGEPA taking. Operator must propose acceptable mitigation or design features. BLM must work with Operator to craft mitigation or design features.
2	BDU Federal 22-30-5078	Pending further mitigation as an operator committed measure to reduce impacts to 2 active golden eagle nest (#s 6252 and 12592) to preclude an MBTA or BGEPA taking. Operator must propose acceptable mitigation or design features. BLM must work with Operator to craft mitigation or design features.

**Denials**

BLM denies the following 1 APD and associated infrastructure.

#	Well Name	Environmental Issue/Justification
1	BDU Federal 21-22 5079	1) Impacts to soils rated as limited reclamation potential, 2) Impacts to slopes greater than 25 %, 3) Impacts to highly erosive soils, 4) Use of unsuitable soil material for road and pad construction, 5) Aspect and slope are prone to slope failure, 6) Inadequate interim and final reclamation plan, 7) Impacts to thin fragile topsoil with fragile root systems: absent adequate stabilization, and reclamation plan.

**Mitigation Measures and Conditions of Approval, Bear Draw Gamma****Site-Specific Conditions of Approval**

In addition to the operator committed measures, and those incorporated from the PRB FEIS, the BLM is including the site-specific COAs to alleviate environmental impacts.

**Surface Use**

1. A 30 day stabilization requirement is applied to wells and access/pipelines which will have impacts to LRP areas namely badlands, blown-out lands, and rock outcrop components. The following wells and roads will be stabilized within 30 days of the start of construction: 21-22 5079, 12-34 5079, 23-30 5078 and the beginning of the access road to the following 6 well locations in Section 26 and 27 T50N R79W is proposed in a short section of steep slopes: 12-26 5079, 13-26 5079, 23-26 5079, 34-26 5079, 41-27 5079, and 43-27 5079.
2. A 30 day stabilization requirement is applied to wells and access/pipelines that were unable to be moved away from or off of slopes in excess of 25%. The following wells and roads will be stabilized within 30 days of the start of construction: 21-22 5079, 12-30 5078 cross country pipeline only 23-30 5078, Cross country pipeline north of 32-30-5078 Stock Reservoir beginning in SWNW to SENW Section 30 T50N R78W, 12-34 5079, 22-34 5079, 12-35 5079 cross country pipeline only and The beginning of the access road to the following 6 well locations in Section 26 and 27 T50N R79W is proposed in a short section of steep slopes: 12-26 5079, 13-26 5079, 23-26 5079, 34-26 5079, 41-27 5079, and 43-27 5079.

3. A 30 day stabilization requirement is applied to wells and access/pipelines which impact sands and sandy ecological sites (map unit symbol 659 map name Hiland and Vonalee). This seed mix should be applied to access/pipeline corridors in the SESW extending north to SWNW Section 11 T50N R79W. A 30-day stabilization requirement is applied to the road through the Flying E Lek mapped perimeter due to sandy soils. These measures must be applied to the area 30 days from the start of construction.
4. The sandy seed mix is applied to wells and access/pipelines which impact sands and sandy ecological sites (map unit symbol 659 map name Hiland and Vonalee). This seed mix should be applied to access/pipeline corridors in the SESW extending north to SWNW Section 11 T50N R79W and to the road through the Flying E Lek mapped perimeter.
5. Place a minimum average of 4 inches of aggregate on road segments where grades exceed 8%.
6. Provide erosion control along all pipeline routes to help achieve successful reclamation. Erosion control is defined as water bars, mulching, straw crimping, or erosion blankets, etc.
7. Cross country pipelines will not be roads or trails after construction is complete. All sections of pipeline will be fully reclaimed to blend with the surrounding topography. Pipeline inspections will be conducted by ATV, foot, or air.
8. The BLM will evaluate reclamation success using the requirements set forth in the EA's Appendix B, Reclamation Policy, aka the State Wide Reclamation Policy revised 2011 which is incorporated here by reference.
9. No soil shall be cast over the north side of the proposed road due to steep slopes present in that area. This will apply to the beginning of the access road to the following 6 well locations in Section 26 and 27 T50N R79W is proposed in a short section of steep slopes: 12-26 5079, 13-26 5079, 23-26 5079, 34-26 5079, 41-27 5079, and 43-27 5079.
10. The road through the Flying E Lek mapped perimeter will have disturbance limited to 30 feet (15 feet from either side of and perpendicular to road or primitive road centerline) to minimize impacts to sandy soils.
11. All permanent above-ground structures (e.g., production equipment, tanks, etc.) not subject to safety requirements will be painted to blend with the landscape's natural color. The paint used will be a color which simulates "Standard Environmental Colors." The color selected for the Bear Draw Gamma POD is Covert Green, 2.5Y 6/2. This color selection blends with the landscape's natural color.

### **Engineering**

1. The operator is responsible for having the licensed professional engineer(s) certify that the actual construction of the road meets the design criteria and is constructed to Bureau standards.
2. Culverts will be placed on channel bottoms on firm, uniform beds, which have been shaped to accept them, and aligned parallel to the channel to minimize erosion. Backfill will be thoroughly compacted.
3. All engineered road segments must be completed, including any culverts, low water crossings and required surfacing, before the drilling rig or other drilling equipment moves onto the pad.

## **Wildlife**

### **Sage Grouse**

1. No surface disturbing activities are permitted during sage-grouse breeding and nesting periods (March 15 – June 30), for the entire Bear Draw Gamma POD project. This condition will be implemented on an annual basis for the duration of surface disturbing activities.
2. A sage-grouse survey will be conducted by a biologist following the most current WGFD protocol. All survey results shall be submitted in writing to a Buffalo BLM biologist no later than July 31 of the current year. This condition will be implemented on an annual basis for the duration of surface disturbing activities.
3. If a previously unknown lek is identified during surveys (April 1-May 7), a Buffalo BLM biologist shall be notified.
4. Surface disturbing activities or surface occupancy is prohibited or restricted on or within one quarter (0.25) mile radius of the perimeter of occupied or undetermined sage-grouse lek.
5. Disruptive activity is restricted on or within one quarter (0.25) mile radius of the perimeter of occupied or undetermined sage-grouse leks from 6 pm to 8 am from March 15-May 15.

### **Burrowing Owls**

The following conditions will alleviate impacts to burrowing owls:

1. No surface disturbing activity shall occur within 0.25 miles of the identified prairie dog colony (see table below) from April 15 to August 31, annually, prior to a burrowing owl nest occupancy survey for the current breeding season according to the Powder River Basin Wildlife Taskforce Protocol, and results will be submitted in writing to the BLM and approved before surface disturbing activities begin. A 0.25 mile buffer will be applied to the burrow if a burrowing owl nest is identified. This condition will be implemented on an annual basis for the duration of surface disturbing activities within the prairie dog town(s). This timing limitation will be in effect unless surveys determine the nest(s) to be inactive.

<b>Nest ID</b>	<b>Legal</b>	<b>Infrastructure</b>
5557	S 14 T50N R79W	Access Road
6082	S 26 T50N R79W	BDU Federal 41-26-5079 and all access roads within 0.25 mile of the burrow

### **Raptors**

The following conditions will alleviate impacts to raptors:

1. No surface disturbing activity shall occur within 0.5 mile of all raptor nests depicted in the table below, from February 1 through July 31, annually, prior to a raptor nest occupancy survey according to the Powder River Basin Wildlife Taskforce Protocol, and results will be submitted in writing to the BLM and approved before surface disturbing activities begin.

<b>BLM ID</b>	<b>Infrastructure</b>
2651	BDU Federal 32-22-5079, BDU Federal 34-22-5079 and associated infrastructure (access road and buried utility)
3789	BDU Federal 21-2-5079 and associated infrastructure (access road and buried utility)
4439	BDU Federal 12-30-5078, BDU Federal 21-30-5078, BDU Federal 22-30-5078, BDU Federal 23-30-5078, BDU Federal 44-19-5078, associated infrastructure (access road and buried utility)
10716	Existing access road W ½ Section 12 T49N, R79W

## **Water**

The operator will sample the springs as listed below twice each year (spring and fall) for the duration of production to determine any changes in water quality or quantity. Analysis will follow the WYPDES Permit initial quality criteria suite. Flow rate will also be determined. Copies of water quality and quantity data will be reported to the BLM BFO. This COA is applied to Grandpa Spring SWNE of Section 2 T50N R79W and Ludock Spring NWNE of Section 10 T50N R79W. The Ludock Spring need only be sampled if it flows to the surface, in acknowledgement that it has not.

## **Cultural**

All surface disturbing activity in the following areas will be monitored by a BLM cultural resource use permit (CRUP) holder or permitted crew chief. The Bureau has identified these areas as having a high potential for buried cultural deposits (areas containing alluvial deposits identified by the NRCS soil survey (NRCS n.d.), and areas of Very High Sensitivity Zones per the PUMP III Model (Eckerle 2005)). Some portions of the monitoring areas as described may lie outside alluvial deposits and exact monitoring areas are left to the discretion of the archeological monitor. All monitored areas must be plotted on the map provided with the monitoring report. The submission of two copies of a monitoring report to BFO is required within 30 days of the completion of all monitoring work.

1. All surface disturbing activity associated with the construction of the BDU Federal 11-27-5079 well and associated utility corridor heading northwest to the BDU Federal 14-22-5079 well location and the associated utility corridor heading southeast to the intersection with Ruby Road, located in the NW/NW of T50N R79W Section 27 and the SW/SW/SW of T50N R79W Section 22.
2. All surface disturbing activity associated with the construction of the BDU Federal 12-3-5079 well and associated utility corridor heading south from the well location to the BDU Federal 14-3-5079 well location, located in the SW/NW and the E/SW of T50N R79W Section 3.
3. All surface disturbing activity associated with the construction of the BDU Federal 14-3-5079 well location, located in the SW/SW of T50N R79W Section 3.
4. All surface disturbing activity associated with the construction of the utility corridor located north of the BDU Federal 14-25-5079 well location, where the corridor crosses the unnamed drainage located in the NE/SE of T50N R79W Section 26 and the NW/SW of T50N R79W Section 25.
5. All surface disturbing activity associated with the construction of the utility corridor running southeast from the BDU Federal 12-30-5079 well location, northwest from the BDU Federal 23-30-5079 well location, and north and northeast to the tie in to the existing Flying E Lateral Pipeline, located in N/SW and NW of T50N R78W Section 30.

## **Programmatic mitigation measures identified in the PRB FEIS ROD**

Programmatic mitigation measures are those, determined through analysis, which may be appropriate to apply at the time of APD approval if site specific conditions warrant. These mitigation measures can be applied by BLM, as determined necessary at the site-specific NEPA APD stage, as COAs and will be in addition to stipulations applied at the time of lease issuance and any standard COA. This will include the submission of as-built maps to the BLM.

## **Surface Water**

1. Channel crossings by pipelines will be constructed so that the pipe is buried at least 4 feet below the channel bottom.

### **Wetland/Riparian**

1. Wetland areas will be disturbed only during dry conditions (that is, during late summer or fall), or when the ground is frozen during the winter.
2. Disturbed channels will be re-shaped to their approximate original configuration or stable geomorphological configuration and properly stabilized.
3. Reclamation of disturbed wetland/riparian areas will begin immediately after project activities are complete.

### **Wildlife**

1. The Companies will locate facilities so that noise from the facilities at any nearby sage grouse or sharp-tailed grouse display grounds does not exceed 49 decibels (10 dBA above background noise) at the display ground.
2. For any surface-disturbing activities proposed in sagebrush shrublands, the Companies will conduct clearance surveys for sage grouse breeding activity during the sage grouse's breeding season before initiating the activities. The surveys must encompass all sagebrush shrublands within 0.5 mile of the proposed activities.
3. All stock tanks shall include a ramp to enable trapped small birds and mammals to escape. See Idaho BLM Technical Bulletin 89-4 entitled Wildlife Watering and Escape Ramps on Livestock Water Developments: Suggestions and Recommendations.

### **Air Quality**

1. During construction, emissions of particulate matter from well pad and resource road construction will be minimized by application of water, or other dust suppressants, with at least 50 percent control efficiency. Roads and well locations constructed on soils susceptible to wind erosion could be appropriately surfaced or otherwise stabilized to reduce the amount of fugitive dust generated by traffic or other activities, and dust inhibitors (surfacing materials, non-saline dust suppressants, and water) could be used as necessary on unpaved collector, local and resource roads that present a fugitive dust problem. The use of chemical dust suppressants on BLM surface will require prior approval from the BLM authorized officer.

## **STANDARD**

### **General**

1. A pre-construction field meeting shall be conducted prior to beginning any dirt work approved under this POD. The operator shall contact the BLM Authorized Officer NRS Travis Kern at 307-684-1074, at least 4 days prior to beginning operations so that the meeting can be scheduled. The operator is responsible for having all contractors present (dirt contractors, drilling contractor, pipeline contractor, project oversight personnel, etc.) including the overall field operations superintendent, and for providing all contractors copies of the approved POD, project map and BLM Conditions of Approval pertinent to the work that each will be doing.
2. If any cultural values [sites, artifacts, human remains (Appendix L FEIS)] are observed during operation of this lease/permit/right-of-way, they will be left intact and the Buffalo Field Manager notified. The authorized officer will conduct an evaluation of the cultural values to establish appropriate mitigation, salvage or treatment. The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological

materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the authorized BLM officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places;
  - the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,
  - a time-frame for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction measures.
3. If paleontological resources, either large or conspicuous, and/or a significant scientific value are discovered during construction, the find will be reported to the Authorized Officer immediately. Construction will be suspended within 250 feet of said find. An evaluation of the paleontological discovery will be made by a BLM approved professional paleontologist within five (5) working days, weather permitting, to determine the appropriate action(s) to prevent the potential loss of any significant paleontological values. Operations within 250 feet of such a discovery will not be resumed until written authorization to proceed is issued by the Authorized Officer. The applicant will bear the cost of any required paleontological appraisals, surface collection of fossils, or salvage of any large conspicuous fossils of significant scientific interest discovered during the operation.
  4. Please contact Travis Kern, Natural Resource Specialist, at (307) 684-1074, Bureau of Land Management, Buffalo, if there are any questions concerning the following surface use COAs.
  5. The first well drilled to each targeted coal zone will be designated as the POD reference well. Designated reference wells must have the ability to be sampled at the wellhead. Water quality samples will be collected by the operator and submitted for analysis using WDEQ NPDES criteria within 30-60 days of initial water production. Results of the analysis will be submitted to the BFO-BLM Authorized Officer as soon as they become available.

## **DRILLING AND PRODUCTION OPERATIONS**

1. The operator shall complete wells (case, cement and under ream) as soon as possible, but no later than 30 days after drilling operations, unless an extension is given by the BLM Authorized Officer.
2. If in the process of air drilling the wells there is a need to utilize mud, all circulating fluids will be contained either in an approved pit or in an aboveground containment tank. The pit or containment tank will be large enough to safely contain the capacity of all expected fluids without danger of overflow. Fluid and cuttings will not be squeezed out of the pit, and the pit will be reclaimed in an expedient manner.

### **Well Control Equipment**

1. The flow line shall be a minimum of 30 feet from the well bore and securely anchored. The 30-foot length of line is a minimum and operators must make consideration for increasing this length for topography and/or wind direction.
2. The flow line shall be a straight run.

3. The flow line must be constructed from non-flammable material.
4. All cuttings and circulating medium shall be directed to and contained in a reserve pit.
5. The nearest edge of the pits shall be a minimum of 25' from the rig.
6. A minimum of 2' of freeboard shall be maintained in the pits at all times.
7. Verbal notification shall be given to the Authorized Officer at least 24 hours before formation tests, BOP tests, running and cementing casing, and drilling over lease expiration dates.

#### **Cement Program**

1. If there are indications of inadequate primary cementing of the surface, intermediate, or production casing strings; such as but not limited to no returns to surface, cement channeling, fallback or mechanical failure of equipment, the operator will evaluate the adequacy of the cementing operations. This evaluation will consist of running a cement bond log (CBL) or an alternate method approved by the Authorized Officer (AO) no sooner than 12 hours and no later than 24 hours from the time the cement was first pumped.
2. If the evaluation indicates inadequate cementing, the operator shall contact a BLM Buffalo Field Office Petroleum Engineer for approval of remedial cementing work.
3. The adequacy of the remedial cementing operations shall be verified by a cement bond log (CBL) or an alternate method approved by the Authorized Officer (AO). All remedial work shall be completed and verified prior to drilling out the casing shoe or perforating the casing for purposes other than remedial cementing.
4. The cement mix water used must be of the same water quality used to develop the cement program.

#### **Production Equipment**

1. Other actions such as off-lease measurement, commingling, allocation, etc. shall be approved via a Notice of Intent sundry (Form No. 3160-5). Submission of additional information in the POD shall not be construed as permission for these items. If the operator wishes to utilize off-lease gas measurement for wells approved in this POD, they are required to obtain approval via a Notice of Intent sundry (Form No. 3160-5) prior to any gas production.

#### **Well and POD Building Identification**

1. From the time a well pad is constructed or a well is spudded (if no well pad needed), until abandonment, all well locations must be properly identified with a legible sign. The sign will include the well name and number, operator name, lease number, and the surveyed location.
2. At each POD building site where federal wells are metered, the operator is required to maintain a legible sign displayed in a conspicuous place. This sign is required to be in place at the time metering goes online. The sign shall include: POD name, Operator, Federal well names and numbers, Federal lease numbers being metered at the POD building, and surveyed location of the building.

#### **Protection of Fresh Water Resources**

1. All oil and gas operations shall be conducted in a manner to prevent the pollution of all freshwater resources. All fresh waters and waters of present or probable future value for domestic, municipal, commercial, stock or agricultural purposes will be confined to their respective strata and shall be adequately protected. Special precautions will be taken to guard against any loss of artesian water

from the strata in which it occurs and the contamination of fresh water by objectionable water, oil, condensate, gas or other deleterious substance to such fresh water.

#### **Miscellaneous Conditions**

1. Any changes to the approved drilling plan and/or these conditions of approval shall be approved by the BLM-Buffalo Field Office Petroleum Engineer prior to being implemented.

After hour's numbers:

Supervisory Petroleum Engineer: Matthew Warren      Cell Telephone: 307-620-0103

2. If any cores are collected, a copy of all analysis performed shall be submitted to the BLM-Buffalo Field Office Petroleum Engineer.

#### **SURFACE USE STANDARD**

##### **A. Construction**

1. Construction and drilling activity will not be conducted using frozen or saturated soil material during periods when watershed damage or excessive rutting is likely to occur.
2. Remove all available topsoil from constructed well locations including areas of cut and fill, and stockpile at the site. Topsoil will also be salvaged for use in reclamation on all other areas of surface disturbance (roads, pipelines, etc.). Clearly segregate topsoil from excess spoil material. Any topsoil stockpiled for one year or longer will be signed and stabilized with annual ryegrass or other suitable cover crop.
3. The operator will not push soil material and overburden over side slopes or into drainages. All soil material disturbed will be placed in an area where it can be retrieved without creating additional undue surface disturbance and where it does not impede watershed and drainage flows.
4. Construct the backslope no steeper than ½:1, and construct the foreslope no steeper than 2:1, unless otherwise directed by the BLM Authorized Officer.
5. Maintain a minimum 20-foot undisturbed vegetative border between toe-of-fill of pad and/or pit areas and the edge of adjacent drainages, unless otherwise directed by the BLM Authorized Officer.
6. To minimize electrocution potential to birds of prey, all overhead electrical power lines will be constructed to standards identified by the Avian Power Line Interaction Committee (2006).
7. The reserve pit will be oriented to prevent collection of surface runoff. After the drilling rig is removed, the operator may need to construct a trench on the uphill side of the reserve pit to divert surface drainage around it. If constructed, the trench will be left intact until the pit is closed.
8. The reserve pit will be lined with an impermeable liner if permeable subsurface material is encountered. An impermeable liner is any liner having permeability less than  $10^{-7}$  cm/sec. The liner will be installed so that it will not leak and will be chemically compatible with all substances that may be put in the pit. Liners made of any man-made synthetic material will be of sufficient strength and thickness to withstand normal installation and pit use. In gravelly or rocky soils, a suitable bedding material such as sand will be used prior to installing the liner.

9. The reserve pit will be constructed so that at least half of its total volume is in solid cut material (below natural ground level).
10. Reserve pits will be adequately fenced during and after drilling operations until pit is reclaimed so as to effectively keep out wildlife and livestock. Adequate fencing, in lieu of more stringent requirements by the surface owner, is defined as follows:
  - Construction materials will consist of steel or wood posts. Three or four strand wire (smooth or barbed) fence or hog panel (16-foot length by 50-inch height) or plastic snow fence must be used with connectors such as fence staples, quick-connect clips, hog rings, hose clamps, twisted wire, etc. Electric fences will not be allowed.
  - Construction standards: Posts shall be firmly set in ground. If wire is used it must be taut and evenly spaced, from ground level to top wire, to effectively keep out animals. Hog panels must be tied securely into posts and one another using fence staples, clamps, etc. Plastic snow fencing must be taut and sturdy. Fence must be at least 2-feet from edge of pit. 3 sides fenced before beginning drilling, the fourth side fenced immediately upon completion of drilling and prior to rig release. Fence must be left up and maintained in adequate condition until pit is closed.
11. Reserve pits will be closed as soon as possible, but no later than 90 days from time of drilling/well completion, unless the BLM Authorized Officer gives an extension. Squeezing of pit fluids and cuttings is prohibited. Pits must be dry of fluids or they must be removed via vac truck or other environmentally acceptable method prior to backfilling, recontouring and replacement of topsoil. Mud and cuttings left in pit must be buried at least 3-feet below recontoured grade. The operator will be responsible for recontouring any subsidence areas that develop from closing a pit before it is sufficiently dry.
12. Culverts will be placed on channel bottoms on firm, uniform beds, which have been shaped to accept them, and aligned parallel to the channel to minimize erosion. Backfill will be thoroughly compacted.
13. The minimum diameter for culverts will be 18 inches. However, all culverts will be appropriately sized in accordance with standards in BLM Manual 9113.
14. Construction and other project-related traffic will be restricted to approved routes. Cross-country vehicle travel will not be allowed.
15. Maximum design speed on all operator constructed and maintained roads will not exceed 25 miles per hour.
16. Pipeline construction shall not block nor change the natural course of any drainage. Pipelines shall cross perpendicular to drainages. Pipelines shall not be run parallel in drainage bottoms. Suspended pipelines shall provide adequate clearance for maximum runoff.
17. Pipeline trenches shall be compacted during backfilling. Pipeline trenches shall be routinely inspected and maintained to ensure proper settling, stabilization and reclamation.
18. During construction, emissions of particulate matter from well pad and road construction would be minimized by application of water or other non-saline dust suppressants with at least 50 percent control efficiency. Dust inhibitors (surfacing materials, non-saline dust suppressants, and water) will be used as necessary on unpaved roads that present a fugitive dust problem. The use of chemical dust suppressants on public surface will require prior approval from the BLM Authorized Officer.

19. Operators are required to obtain a National Pollution Discharge Elimination System (NPDES) Storm Water Permit from the Wyoming DEQ for any projects that disturb five or more acres (changing to one acre in March 2005). This general construction storm water permit must be obtained from WDEQ prior to any surface disturbing activities and can be obtained by following directions on the WDEQ website at <http://deq.state.wy.us>. Further information can be obtained by contacting Barb Sahl at (307) 777-7570.
20. The operator shall submit a Sundry Notice (Form 3160-5) to BLM for approval prior to construction of any new surface disturbing activities that are not specifically addressed in the approved APD or POD Surface Use Plan.

#### **B. Operations/Maintenance**

1. Confine all equipment and vehicles to the access road(s), pad(s), and area(s) specified in the approved APD or POD.
2. All waste, other than human waste and drilling fluids, will be contained in a portable trash cage. This waste will be transported to a State approved waste disposal site immediately upon completion of drilling operations. No trash or empty barrels will be placed in the reserve pit or buried on location. Operators and their contractors will comply with all state and local laws and regulations pertaining to disposal of human and solid waste will be complied with.
3. The operator will be responsible for prevention and control of noxious weeds and weeds of concern on all areas of surface disturbance associated with this project (well locations, roads, water management facilities, etc.) Use of pesticides shall comply with the applicable Federal and State laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of Interior. Prior to the use of pesticides on public land, the holder shall obtain from the BLM authorized officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the authorized officer to such use.
4. All permanent above-ground structures (e.g., production equipment, tanks, etc.) not subject to safety requirements will be painted to blend with the natural color of the landscape. The paint used will be a color which simulates "Standard Environmental Colors." The color selected for this (site, project), is (name and Munsell Soil Color Number).
5. Sewage shall be placed in a self-contained, chemically treated porta-potty on location.
6. The operator and their contractors shall ensure that all use, production, storage, transport and disposal of hazardous and extremely hazardous materials associated with the drilling, completion and production of these wells will be in accordance with all applicable existing or hereafter promulgated federal, state and local government rules, regulations and guidelines. All project-related activities involving hazardous materials will be conducted in a manner to minimize potential environmental impacts. In accordance with OSHA requirements, a file will be maintained onsite containing current Material Safety Data Sheets (MSDS) for all chemicals, compounds and/or substances which are used in the course of construction, drilling, completion and production operations.
7. Produced fluids shall be put in test tanks on location during completion work. Produced water will be put in the reserve pit during completion work per Onshore Order #7.
8. The only fluids/waste materials which are authorized to go into the reserve pit are RCRA exempt exploration and production wastes. These include:
  - drilling muds & cuttings
  - rigwash

- excess cement and certain completion & stimulation fluids defined by EPA as exempt

It does not include drilling rig waste, such as:

- spent hydraulic fluids
- used engine oil
- used oil filter
- empty cement, drilling mud, or other product sacks
- empty paint, pipe dope, chemical or other product containers
- excess chemicals or chemical rinsate

Any evidence of non-exempt wastes being put into the reserve pit may result in the BLM Authorized Officer requiring specific testing and closure requirements.

9. The operator shall restrict travel on unimproved two-track roads during periods of inclement weather or spring thaw when the possibility exists for excessive surface resource damage (e.g., rutting in excess of 4-inches, travel outside two-track roadway, etc.).

### **C. Producing Well**

1. Landscape those areas not required for production to the surrounding topography as soon as possible. The fluids and mud must be dry in the reserve pit before re-contouring pit area. The operator will be responsible for re-contouring and reseeded of any subsidence areas that develop from closing a pit before it is completely dry.
2. Reduce the backslope to 2:1 and the foreslope to 3:1, unless otherwise directed by the BLM Authorized Officer. Reduce slopes by pulling fill material up from foreslope into the toe of cut slopes.
3. Any spilled or leaked oil, produced water or treatment chemicals must be reported in accordance with NTL-3A and immediately cleaned up in accordance with BLM requirements. This includes clean-up and proper disposition of soils contaminated as a result of such spills/leaks.
4. Distribute stockpiled topsoil evenly over those areas not required for production (ie., cut/fill slopes, road ditches, pipelines, etc.) and reseed with approved seed mix.
5. Upgrade and maintain access roads and drainage control (e.g., culverts, drainage dips, ditching, crowning, surfacing, etc.) as necessary and as directed by the BLM Authorized Officer to prevent soil erosion and accommodate safe, environmentally-sound access.
6. Prior to construction of production facilities not specifically addressed in the APD/POD, the operator shall submit a Sundry Notice to the BLM Authorized Officer for approval.
7. Waterbars shall be installed on all reclaimed pipeline corridors per the guidelines in A.4.2.4 #6.

### **D. Reclamation/Dry Hole**

1. All disturbed lands associated with this project, including the pipelines, access roads, water management facilities, etc will be expediently reclaimed and reseeded in accordance with the surface use plan and any pertinent site-specific COAs.
2. Disturbed lands will be re-contoured back to conform to existing undisturbed topography. No depressions will be left that trap water or form ponds.
3. The fluids and mud must be dry in the reserve pit before re-contouring pit area. The operator will be responsible for re-contouring of any subsidence areas that develop from closing a pit before it is

completely dry. The plastic pit liner (if any) will be cut off below grade and properly disposed of at a state authorized landfill before beginning to re-contour the site.

4. Before the location has been reshaped and prior to redistributing the topsoil, the operator will rip or scarify the drilling area and access road on the contour, to a depth of at least 12 inches. The rippers are to be no farther than 24 inches apart.
5. Distribute the topsoil evenly over the entire location and other disturbed areas. Prepare the seedbed by disking following the contour.
6. Waterbars are to be constructed at least one (1) foot deep, on the contour with approximately two (2) feet of drop per 100 feet of waterbar to ensure drainage, and extended into established vegetation. All waterbars are to be constructed with the berm on the downhill side to prevent the soft material from silting in the trench. The initial waterbar should be constructed at the top of the backslope. Subsequent waterbars should follow the following general spacing guidelines:

<b>Slope (percent)</b>	<b>Spacing Interval (feet)</b>
< 2	200
2 - 4	100
4 - 5	75
> 5	50

7. BLM will not release the performance bond until the area has been successfully revegetated (evaluation will be made after the second complete growing season) and has met all other reclamation goals of the surface owner and surface management agency.
8. A Notice of Intent to Abandon and a Subsequent Report of Abandonment must be submitted for abandonment approval.
9. For performance bond release approval, a Final Abandonment Notice (with a surface owner release letter on split-estate) must be submitted prior to a final abandonment evaluation by BLM.
10. Phased reclamation plans will be submitted to BLM for approval prior to individual POD facility abandonment via a Notice of Intent (NOI) Sundry Notice. Individual facilities, such as well locations, pipelines, discharge points, impoundments, etc. need to be addressed in these plans as they are no longer needed. Individual items that will need to be addressed in reclamation plans include:
  - Pit closure (Close ASAP after suitably dry, but no later than 90 days from time of drilling unless an extension is given by BLM Authorized Officer.) BLM may require closure prior to 90 days in some cases due to land use or environmental concerns.
  - Configuration of reshaped topography, drainage systems, and other surface manipulations
  - Waste disposal
  - Revegetation methods, including specific seed mix (pounds pure live seed/acre) and soil treatments (seedbed preparation, fertilization, mulching, etc.). On private surface, the landowner should be consulted for the specific seed mix.
  - Other practices that will be used to reclaim and stabilize all disturbed areas, such as water bars, erosion fabric, hydro-mulching, etc.
  - An estimate of the timetables for beginning and completing various reclamation operations relative to weather and local land uses.
  - Methods and measures that will be used to control noxious weeds, addressing both ingress and egress to the individual well or POD.

- Decommissioning/removal of all surface facilities
- Closure and reclamation of areas utilized or impacted by produced CBM water, including discharge points, reservoirs, off-channel pits, land application areas, livestock/wildlife watering facilities, surface discharge stream channels, etc.

11. Soil fertility testing and the addition of soil amendments may be required to stabilize some disturbed lands.

12. Any mulch utilized for reclamation needs to be certified weed free.